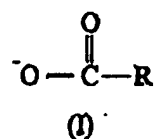


### Abstract

The invention relates to a process for the oxidation of unsaturated hydrocarbons, wherein  
5 an unsaturated hydrocarbon, an oxygen-containing oxidizing agent, a palladium complex  
as the catalyst containing a ligand of the formula (I)



10

wherein R is a saturated, halogenated alkyl radical having from about 1 to about 20 carbon atoms,

15 and optionally auxiliary substances in a liquid phase based on

(α1) from about 10 to about 100 wt.% of a protic polar solvent and

(α2) from 0 to about 90 wt.% of an aprotic polar solvent, the sum of components (α1) and (α2) being about 100 wt.%,

20 at a temperature in a range from about 30 to about 300°C under a pressure in a range from about 1 to about 200 bar, such that a liquid phase containing oxygen-containing hydrocarbons is obtained.